Q1

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<title>Credit Card Validator</title>

<script>

function validateCard() {

let cardNumber = document.getElementById("cardNumber").value;

let message = "";

const cards = [

{ type: "Master Card", prefix: /^5[1-5]/, length: 16 },

{ type: "Visa", prefix: /^4/, length: [13, 16] },

{ type: "American Express", prefix: /^(34|37)/, length: 15 }

];

let validCard = cards.find(card =>

card.prefix.test(cardNumber) && (Array.isArray(card.length) ? card.length.includes(cardNumber.length) : card.length === cardNumber.length)

);

message = validCard ? `Valid ${validCard.type} card` : "Invalid card number";

document.getElementById("result").innerText = message;

}

</script>

</head>

<body>

<h2>Credit Card Validator</h2>

<label>Enter Card Number:</label>

<input type="text" id="cardNumber">

<button onclick="validateCard()">Validate</button>

<p id="result"></p>

</body>

</html>

Q2

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<title>Form Validation</title>

<script>

function validateForm() {

let name = document.getElementById("name").value;

let email = document.getElementById("email").value;

let password = document.getElementById("password").value;

let message = "";

let emailRegex = /^[a-zA-Z0-9.\_%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,}$/;

let passwordRegex = /^(?=.\*[A-Za-z])(?=.\*\d)[A-Za-z\d]{6,}$/;

if (name.length < 3) {

message += "Name must be at least 3 characters.\n";

}

if (!emailRegex.test(email)) {

message += "Invalid email format.\n";

}

if (!passwordRegex.test(password)) {

message += "Password must be at least 6 characters and include numbers and letters.\n";

}

alert(message || "Form is valid!");

}

</script>

</head>

<body>

<h2>Form Validation</h2>

<label>Name:</label> <input type="text" id="name"><br>

<label>Email:</label> <input type="text" id="email"><br>

<label>Password:</label> <input type="password" id="password"><br>

<button onclick="validateForm()">Submit</button>

</body>

</html>

Q3

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<title>Country-Capital Matching</title>

<script>

function checkAnswer() {

let country = document.getElementById("country").value;

let capital = document.getElementById("capital").value;

let capitals = { "India": "Delhi", "USA": "Washington", "France": "Paris" };

let result = capitals[country] === capital ? "Correct Answer!" : "Wrong! The correct capital is " + capitals[country];

document.getElementById("result").innerText = result;

}

</script>

</head>

<body>

<h2>Match Country with Capital</h2>

<label>Country:</label>

<select id="country">

<option>India</option>

<option>USA</option>

<option>France</option>

</select>

<label>Capital:</label>

<select id="capital">

<option>Delhi</option>

<option>Washington</option>

<option>Paris</option>

</select>

<button onclick="checkAnswer()">Submit</button>

<p id="result"></p>

</body>

</html>

Q4

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<title>Simple Calculator</title>

<script>

function calculate(operation) {

let num1 = parseFloat(document.getElementById("num1").value);

let num2 = parseFloat(document.getElementById("num2").value);

let result = 0;

if (operation === "add") result = num1 + num2;

else if (operation === "subtract") result = num1 - num2;

else if (operation === "multiply") result = num1 \* num2;

else if (operation === "divide") result = num2 !== 0 ? num1 / num2 : "Cannot divide by zero";

document.getElementById("result").innerText = "Result: " + result;

}

</script>

</head>

<body>

<h2>Calculator</h2>

<input type="number" id="num1">

<input type="number" id="num2">

<button onclick="calculate('add')">+</button>

<button onclick="calculate('subtract')">-</button>

<button onclick="calculate('multiply')">\*</button>

<button onclick="calculate('divide')">/</button>

<p id="result"></p>

</body>

</html>

Q5

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<title>Auto Change Background</title>

<script>

function changeColor() {

const colors = ["red", "blue", "green", "yellow", "purple"];

document.body.style.backgroundColor = colors[Math.floor(Math.random() \* colors.length)];

}

setInterval(changeColor, 60000);

</script>

</head>

<body>

<h2>Page Auto-Modifies Every Minute</h2>

</body>

</html>

Q6

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Birthdate to Day Finder</title>

<style>

body {

font-family: Arial, sans-serif;

display: flex;

justify-content: center;

align-items: center;

height: 100vh;

background-color: #f4f4f4;

}

.container {

background: white;

padding: 20px;

box-shadow: 0px 0px 10px rgba(0, 0, 0, 0.2);

border-radius: 10px;

text-align: center;

}

input {

padding: 10px;

margin: 10px 0;

border: 1px solid #ccc;

border-radius: 5px;

}

button {

padding: 10px 15px;

background: #28a745;

color: white;

border: none;

cursor: pointer;

border-radius: 5px;

}

button:hover {

background: #218838;

}

</style>

</head>

<body>

<div class="container">

<h2>Find Your Birth Day</h2>

<input type="date" id="birthdate">

<br>

<button onclick="findDay()">Find Day</button>

</div>

<script>

function findDay() {

let birthdate = document.getElementById("birthdate").value;

if (!birthdate) {

alert("Please enter a valid birthdate!");

return;

}

let date = new Date(birthdate);

let days = ["Sunday", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday"];

let dayOfWeek = days[date.getDay()];

alert("You were born on a " + dayOfWeek);

}

</script>

</body>

</html>

Q7

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Phone Number Extractor</title>

<style>

body {

font-family: Arial, sans-serif;

display: flex;

justify-content: center;

align-items: center;

height: 100vh;

background-color: #f4f4f4;

}

.container {

background: white;

padding: 20px;

box-shadow: 0px 0px 10px rgba(0, 0, 0, 0.2);

border-radius: 10px;

text-align: center;

}

input {

padding: 10px;

margin: 10px 5px;

border: 1px solid #ccc;

border-radius: 5px;

}

button {

padding: 10px 15px;

background: #007bff;

color: white;

border: none;

cursor: pointer;

border-radius: 5px;

}

button:hover {

background: #0056b3;

}

</style>

</head>

<body>

<div class="container">

<h2>Extract Area Code & Phone Number</h2>

<input type="text" id="phoneNumber" placeholder="Enter phone (555)555-555">

<br><br>

<button onclick="extractNumber()">Extract</button>

<br><br>

<input type="text" id="areaCode" placeholder="Area Code" readonly>

<input type="text" id="phoneDigits" placeholder="7-Digit Number" readonly>

</div>

<script>

function extractNumber() {

let phoneInput = document.getElementById("phoneNumber").value;

let phonePattern = /^\((\d{3})\)(\d{3})-(\d{4})$/;

let match = phoneInput.match(phonePattern);

if (!match) {

alert("Please enter a valid phone number in format (555)555-555");

return;

}

let areaCode = match[1];

let phoneDigits = match[2] + "-" + match[3];

document.getElementById("areaCode").value = areaCode;

document.getElementById("phoneDigits").value = phoneDigits;

}

</script>

</body>

</html>

Q8

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>String & Number Functions</title>

<style>

body {

font-family: Arial, sans-serif;

display: flex;

justify-content: center;

align-items: center;

height: 100vh;

background-color: #f4f4f4;

}

.container {

background: white;

padding: 20px;

box-shadow: 0px 0px 10px rgba(0, 0, 0, 0.2);

border-radius: 10px;

text-align: center;

}

input {

padding: 10px;

margin: 10px 5px;

border: 1px solid #ccc;

border-radius: 5px;

}

button {

padding: 10px 15px;

background: #007bff;

color: white;

border: none;

cursor: pointer;

border-radius: 5px;

}

button:hover {

background: #0056b3;

}

</style>

</head>

<body>

<div class="container">

<h2>String & Number Functions</h2>

<h3>Find Left-Most Vowel Position</h3>

<input type="text" id="stringInput" placeholder="Enter a string">

<button onclick="findVowel()">Find Vowel</button>

<p id="vowelResult"></p>

<h3>Reverse Digits of a Number</h3>

<input type="number" id="numberInput" placeholder="Enter a number">

<button onclick="reverseNumber()">Reverse</button>

<p id="reverseResult"></p>

</div>

<script>

function findVowel() {

let str = document.getElementById("stringInput").value.toLowerCase();

let vowels = "aeiou";

for (let i = 0; i < str.length; i++) {

if (vowels.includes(str[i])) {

document.getElementById("vowelResult").innerText = "Left-most vowel is at position: " + (i + 1);

return;

}

}

document.getElementById("vowelResult").innerText = "No vowels found in the string.";

}

function reverseNumber() {

let num = document.getElementById("numberInput").value;

let reversed = num.toString().split("").reverse().join("");

document.getElementById("reverseResult").innerText = "Reversed number: " + reversed;

}

</script>

</body>

</html>

Q9

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Case Converter</title>

<style>

body {

font-family: Arial, sans-serif;

text-align: center;

margin-top: 50px;

background-color: #f4f4f4;

}

.container {

background: white;

padding: 20px;

width: 40%;

margin: auto;

box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);

border-radius: 10px;

}

input {

width: 80%;

padding: 10px;

margin: 10px;

font-size: 16px;

}

button {

padding: 10px 20px;

font-size: 16px;

background: #007bff;

color: white;

border: none;

cursor: pointer;

border-radius: 5px;

}

button:hover {

background: #0056b3;

}

p {

font-size: 18px;

font-weight: bold;

margin-top: 20px;

}

</style>

</head>

<body>

<div class="container">

<h2>Convert Uppercase to Lowercase & Vice Versa</h2>

<input type="text" id="inputText" placeholder="Enter text here">

<button onclick="convertText()">Convert</button>

<p id="result"></p>

</div>

<script>

function swapCase(str) {

let swapped = "";

for (let char of str) {

if (char === char.toUpperCase()) {

swapped += char.toLowerCase();

} else {

swapped += char.toUpperCase();

}

}

return swapped;

}

function convertText() {

let input = document.getElementById("inputText").value;

let result = swapCase(input);

document.getElementById("result").innerText = "Converted: " + result;

}

</script>

</body>

</html>

Q10

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Maruti Car Survey</title>

<style>

body {

font-family: Arial, sans-serif;

text-align: center;

background-color: #f4f4f4;

}

h2 {

margin-bottom: 10px;

}

table {

width: 60%;

margin: auto;

border-collapse: collapse;

background: white;

box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);

border-radius: 5px;

}

th, td {

border: 1px solid black;

padding: 10px;

text-align: center;

}

th {

background: #007bff;

color: white;

}

input {

width: 60px;

padding: 5px;

text-align: center;

}

button {

margin-top: 15px;

padding: 10px 20px;

font-size: 16px;

background: #28a745;

color: white;

border: none;

cursor: pointer;

border-radius: 5px;

}

button:hover {

background: #218838;

}

</style>

</head>

<body>

<h2>Maruti Car Ownership Survey</h2>

<table>

<thead>

<tr>

<th>City/Model</th>

<th>Maruti-K10</th>

<th>Zen-Astelo</th>

<th>Wagnor</th>

<th>Maruti-SX4</th>

</tr>

</thead>

<tbody>

<tr>

<td>Delhi</td>

<td><input type="number" id="delhi-k10" value="0"></td>

<td><input type="number" id="delhi-zen" value="0"></td>

<td><input type="number" id="delhi-wagnor" value="0"></td>

<td><input type="number" id="delhi-sx4" value="0"></td>

</tr>

<tr>

<td>Mumbai</td>

<td><input type="number" id="mumbai-k10" value="0"></td>

<td><input type="number" id="mumbai-zen" value="0"></td>

<td><input type="number" id="mumbai-wagnor" value="0"></td>

<td><input type="number" id="mumbai-sx4" value="0"></td>

</tr>

<tr>

<td>Chennai</td>

<td><input type="number" id="chennai-k10" value="0"></td>

<td><input type="number" id="chennai-zen" value="0"></td>

<td><input type="number" id="chennai-wagnor" value="0"></td>

<td><input type="number" id="chennai-sx4" value="0"></td>

</tr>

<tr>

<td>Kolkata</td>

<td><input type="number" id="kolkata-k10" value="0"></td>

<td><input type="number" id="kolkata-zen" value="0"></td>

<td><input type="number" id="kolkata-wagnor" value="0"></td>

<td><input type="number" id="kolkata-sx4" value="0"></td>

</tr>

<tr>

<td><strong>Total</strong></td>

<td id="total-k10">0</td>

<td id="total-zen">0</td>

<td id="total-wagnor">0</td>

<td id="total-sx4">0</td>

</tr>

</tbody>

</table>

<button onclick="calculateTotals()">Calculate Totals</button>

<script>

function calculateTotals() {

let models = ["k10", "zen", "wagnor", "sx4"];

let cities = ["delhi", "mumbai", "chennai", "kolkata"];

models.forEach(model => {

let total = 0;

cities.forEach(city => {

let value = parseInt(document.getElementById(`${city}-${model}`).value) || 0;

total += value;

});

document.getElementById(`total-${model}`).innerText = total;

});

}

</script>

</body>

</html>